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| 10/783,771 | 02/20/2004 | Joseph P. Odenwalder | 030243 | 6666 |

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| EXAMINER |
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ETTEHADIEH, ASLAN

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| ART UNIT | PAPER NUMBER |
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2611

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
| 3 MONTHS | 01/24/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/24/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/783,771

Applicant(s)

ODENWALDER, JOSEPH P.

Examiner

Aslan Ettehadieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/24/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, functions/elements (i.e. decoding) of claims 12 – 22 and 34 – 44 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3 and 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Regarding claim 3, claim 3 recites "each of the intermediate data streams", does applicant mean that there are a plurality of intermediate data streams or
5. Regarding claim 12, claim 12 recites "wherein the transmitter comprises" which is vague and indefinite, does applicant mean a transceiver or the receiver or etc.

Claim Rejections - 35 USC § 102

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 – 6, 8, 12 – 14, 16 – 17, 19, 23 – 28, 30, 34 – 36, 38 – 39, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US 6219374).

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7. Regarding claim 1, Kim discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 1); and a transmitter subsystem coupled to the processing subsystem (figure 1); wherein the processing subsystem is configured to cover an initial data stream to be transmitted on a first wireless communication channel with at least two different spreading codes (figure 1, col. 3 lines 26 – 49); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 1, col. 3 lines 26 – 49).

8. Regarding claim 2, Kim further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 1, col. 3 lines 26 – 49; where element 101 is being interpreted as a demultiplexer).

9. Regarding claim 3, Kim further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 1, col. 3 lines 26 – 49).

10. Regarding claim 4, Kim further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 1, col. 3 lines 26 – 49; where the connection proceeding elements 110 and 111 and preceding element 112 is being interpreted as multiplex).

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11. Regarding claim 5, Kim further discloses the spreading codes are different-length spreading codes (figure 1, col. 3 lines 26 – 49; where it is well known in the art that different spreading factors means different code lengths).

12. Regarding claim 6, Kim further discloses the spreading codes are Walsh codes (figure 1, col. 3 lines 26 – 49).

13. Regarding claim 8, Kim further discloses the initial data stream comprises a stream of symbols (figure 1, col. 3 lines 26 – 49).

14. Regarding claim 12, Kim discloses a receiver operable to communicate with a transmitter via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figures 1, 3); and a receiver subsystem coupled to the processing subsystem (figures 1, 3); wherein the receiver subsystem is configured to receive an initial data stream via a first wireless communication channel (figures 1, 3, col. 4 lines 10 – 64); and wherein the processing subsystem is configured to decode the initial data stream using at least two different spreading codes (figures 1, 3, col. 4 lines 10 – 64).

15. Regarding claim 13, Kim further discloses wherein the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 3, col. 4 lines 10 – 64; where the connection proceeding element $r(t)$ and preceding elements 301 and 302 is being interpreted as a demultiplexer).

16. Regarding claim 14, Kim further discloses the processing subsystem is configured to decode each of the intermediate data streams using one of a set of

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spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 3, col. 4 lines 10 – 64).

17. Regarding claim 16, Kim further the spreading codes are different-length spreading codes (figure 3, col. 4 lines 10 – 64; where it is well known in the art that different spreading factors means different code lengths).

18. Regarding claim 17, Kim further discloses the spreading codes are Walsh codes (figure 3, col. 4 lines 10 – 64).

19. Regarding claim 19, Kim further discloses the decoded data stream comprises a stream of symbols (figure 3, col. 4 lines 10 – 64)

20. Regarding claims 23 – 28, 30, 34 – 36, 38 – 39, and 41, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 – 6, 8, 12 – 14, 16 – 17, 19 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 – 6, 8, 12 – 14, 16 – 17, 19, respectively.

21. Claims 1 – 10 and 23 – 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Wiberg et al. (US 2002/0172264).

22. regarding claim 1, Wiberg discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 2); and a transmitter subsystem coupled to the processing subsystem (figure 2); wherein the processing subsystem is configured to cover an initial data stream to be transmitted on a first wireless communication channel with at least

two different spreading codes (figure 2, paragraph 25); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 2, paragraph 25).

23. Regarding claim 2, Wiberg further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 2, paragraph 25; where element 215 is being interpreted as a demultiplexer).

24. Regarding claim 3, Wiberg further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 2, paragraph 25).

25. Regarding claim 4, Wiberg further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 2, paragraph 25; where the adder is being interpreted as multiplex).

26. Regarding claim 5, Wiberg further discloses the spreading codes are different-length spreading codes (figure 2, paragraph 25; where it is well known in the art that different spreading factors means different code lengths).

27. Regarding claim 6, Wiberg further discloses the spreading codes are Walsh codes (figure 2, paragraphs 25, 41, 44).

28. Regarding claim 7, Wiberg further discloses the spreading codes comprise +- and ++-- codes (figures 2, 3, paragraphs 25, 26).

29. Regarding claim 8, Wiberg further discloses the initial data stream comprises a stream of symbols (figures 2, 3, paragraphs 19, 25, 33, 45).

30. Regarding claims 9 and 10, Wiberg further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 24).

31. Regarding claims 23 – 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 – 10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 – 10, respectively.

32. Claims 1 – 6, 8 – 10, 23 – 28, and 30 – 32 are rejected under 35 U.S.C. 102(a) as being anticipated by Proctor, Jr. et al. (US 2003/0035466).

33. regarding claim 1, Proctor discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figures 1 – 4); and a transmitter subsystem coupled to the processing subsystem (figures 1 – 4); wherein the processing subsystem is configured to cover an initial data stream to be transmitted on a first wireless communication channel with at least two different spreading codes (figures 1 – 4, paragraphs 56 – 63); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figures 1 – 4, paragraphs 56 – 63).

34. Regarding claim 2, Proctor further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 4).

35. Regarding claim 3, Proctor further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figures 1 – 4, paragraphs 56 – 63).

36. Regarding claim 4, Proctor further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 4; where the element proceeding elements 508 is being interpreted as multiplex).

37. Regarding claim 5, Proctor further discloses the spreading codes are different-length spreading codes (figures 1 – 4, paragraphs 56 – 63).

38. Regarding claim 6, Proctor further discloses the spreading codes are Walsh codes (figures 1 – 4, paragraphs 56 – 63).

39. Regarding claim 8, Proctor further discloses the initial data stream comprises a stream of symbols (paragraphs 10, 54).

40. Regarding claims 9 and 10, Proctor further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 29).

41. Regarding claims 23 – 28 and 30 – 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1

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– 6 and 8 – 10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 – 6 and 8 – 10, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

42. Claims 9, 10, 15, 20, 21, 30, 31, 37, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of Sato (US 6574205).

43. Regarding claims 9, 10, 20, 21, 30, 31, 42, and 43, Kim is not explicit about the transmitter / receiver comprises a component of a base station / mobile station operable in a wireless communication system.

In the same field of endeavor, however, Sato discloses the transmitter / receiver comprises a component of a base station / mobile station operable in a wireless communication system (figure 1).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the transmitter / receiver comprises a component of a base station / mobile station operable in a wireless communication system as taught by Sato in the system of Kim to provide more diversity.

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44. Regarding claims 15 and 37, Kim is not explicit about the processing subsystem is configured to multiplex the intermediate data streams into a decoded data stream.

In the same field of endeavor, however, Sato discloses the processing subsystem is configured to multiplex the intermediate data streams into a decoded data stream (figure 3 element 22).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the processing subsystem is configured to multiplex the intermediate data streams into a decoded data stream as taught by Sato in the system of Kim to provide more efficient demodulation.

45. Claims 11 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of Wiberg et al. (US 2002/0172264).

46. Regarding claims 11 and 33, Kim is not explicit about the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to transmit the resulting data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream.

In the same field of endeavor, however, Wiberg discloses the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to transmit the resulting data stream on the second

wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream (figure 2, paragraph 25).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to transmit the resulting data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream as taught by Wiberg in the system of Kim to provide proper channelization (paragraph 25).

47. Claims 7, 18, 29, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of Dahlman et al. (US 6222875).

48. Regarding claims 7, 18, 29, and 40, Kim is not explicit about the spreading codes comprise +-and ++-- codes.

In the same field of endeavor, however, Dahlman discloses the spreading codes comprise +-and ++-- codes (figure 3, col. 3 line 39, col. 5 lines 25 – 65).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use the spreading codes comprise +-and ++-- codes as taught by Dahlman in the system of Kim to reduce buffering in the system (col. 5 line 30).

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49. Claims 22 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6219374) in view of McDonough et al. (US 2003/0156593).

50. Regarding claims 22 and 44, Kim is not explicit about covering an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and transmitting a corresponding data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream.

In the same field of endeavor, however, McDonough discloses covering an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and transmitting a corresponding data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream (figures 3, 6, paragraph 8).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use covering an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and transmitting a corresponding data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream as taught by McDonough in the system of Kim to more diversity.

Other prior art cited

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51. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

52. Kim et al. (US RE38603) discloses a system relevant to claims 1 – 6, 8, 12 – 17, 19, 23 – 28, 30, 34 – 39, and 41 (figures 2, 3).

Contact Information

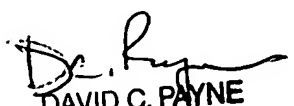
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aslan Ettehadieh
Examiner
Art Unit 2611

AE


DAVID C. PAYNE
PRIMARY PATENT EXAMINER